

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference BP111126 | FOR FURTHER ACTION | | See Form PCT/IPEA/416 |
| International application No. PCT/FI2005/000074 | International filing date (day/month/year) 04.02.2005 | Priority date (day/month/year) 06.02.2004 | |
| International Patent Classification (IPC) or national classification and IPC INV. C01G23/053 | | | |
| Applicant KEMIRA PIGMENTS OY | | | |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. *(sent to the applicant and to the International Bureau)* a total of sheets, as follows:
 - sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- Box No. I Basis of the report
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

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|--|--|
| Date of submission of the demand 03.12.2005 | Date of completion of this report 06.04.2006 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | Authorized officer Siebel, E Telephone No. +31 70 340- |



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/FI2005/000074

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
 - international search (under Rules 12.3 and 23.1(b))
 - publication of the international application (under Rule 12.4)
 - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-17 as originally filed

Claims, Numbers

1-22 as originally filed

Drawings, Sheets

1/2, 2/2 as originally filed

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. The amendments have resulted in the cancellation of:
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/FI2005/000074

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|---------------------|------|--------|--------------------|
| Novelty (N) | Yes: | Claims | 2-8, 13-16,19,20 |
| | No: | Claims | 1,9-12,17,18,21,22 |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-22 |

2. Citations and explanations (Rule 70.7):

see separate sheet

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Re Item V.

1 Reference is made to the following document:

D1: Y. LI, Y. FAN, Y. CHEN: "A NOVEL METHOD FOR PREPARATION OF NANOCRYSTALLINE RUTILE TiO₂ POWDERS BY LIQUID HYDROLYSIS OF TiCl₄" J. MATER. CHEM., vol. 12, 2002, pages 1387-1390, XP002341998
D2: EP-A-1 095 908

2.1. Document D1 discloses a process for preparing TiO₂, wherein an aqueous solution containing titanium tetrachloride having a concentration 90,4g/l TiO₂ (1.13mol TiCl₄/l) was subjected to hydrolysis at 20°C in presence of rutile type seed crystals to precipitate hydrated titanium oxide (see D1, Table 1, N°13; page 1387, § "Experimental"). The calcination Temperature is from 300-500°C (see D1, page 1388, Fig.1). The obtained rutile TiO₂ has a particle size of 10.5 nm and a surface area of 70.3 m²/g (see D1, table 1 N°13).

2.1a. Implicitly document D1 discloses, that the obtained TiO₂ will have photo catalytic properties, as the large surface is important for the catalytic activity (see D1, page 1388, right column).

2.1b. The subject-matter of claim 1,9-12,17,21 is not new in the sense of Article 33(2) PCT.

2.2. Dependent claims 2-8,13 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

3. Document D2 discloses a highly photo catalytic active titanium dioxide (see D2, [0037], claims 5-8)

3.1. The subject-matter of claims 17, 18, 21 and 22 is not new in the sense of Article 33(2) PCT.

3.2. Dependent claims 19,20 do not contain any features which, in combination with the

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features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

4. Comparative example 2 refers to EP0444789 A. However, EP0444789 A refers to encoding and decoding of MAC video signals.